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ABSTRACT

At the present time, over 2,000 elementary schools in this country have adopted a model known as Individually Guided Education (IGE). This research carried out in 59 elementary schools in Connecticut disputed the claim of IGE advocates that the organizational component of the IGE model known as Multi Unit School (MUS) offers a more facilitative environment than do other administrative arrangements. Furthermore, it revealed a diminished leadership role on the part of the principal and an apparent lack of assumption of leadership functions by other staff members. (Author)

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THE RELATIONSHIP OF ORGANIZATIONAL STRUCTURE, LEADER BEHAVIOR OF THE PRINCIPAL AND PERSONALITY ORIENTATION OF THE PRINCIPAL TO SCHOOL MANAGEMENT CLIMATE

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THE RELATIONSHIP OF ORGANIZATIONAL STRUCTURE, LEADER BEHAVIOR OF THE PRINCIPAL AND PERSONALITY ORIENTATION OF THE PRINCIPAL TO SCHOOL MANAGEMENT CLIMATE

Background of the Problem

This study examined the relationships between principal leader behavior, principal personality orientation, formal organizational structure, and school management climate as they existed in selected elementary schools in Connecticut. Its central focus related to the first significant attempt to bring about planned organizational change in schools in this country through a systems approach known as Individually Guided Education (IGE). This inquiry was particularly concerned with the organizational component of the IGE system known as Multi Unit School (MUS).

In 1966 the Wisconsin Research and Development Center at the University of Wisconsin initiated a new model of elementary school education known as Individually Guided Education. While some of the components of the IGE system had been advocated by leaders in elementary education for a number of years, the Wisconsin model offered the first comprehensive systems design which coordinated such concepts as multi unit staffing, multi age grouping, non-gradedness, team teaching and large, small group and individualized instruction in one comprehensive package. The central objective of IGE is to develop a learning program flexible enough to meet the needs of all students (Holzman, 1972, Kluasmeier, 1971-A).

That the program has been well-accepted is attested to by the fact that from an initial endeavor by thirteen Wisconsin schools in 1966, the number of schools utilizing various forms of IGE had grown to over 2,000 by the end of 1973. In the State of Connecticut some sixty elementary schools had begun implementing

the IGE process, and a number of others were considering the program. Thus it appeared that IGE represented a significant and widespread innovation that merited investigation.

The IGE system includes seven components: an organizational pattern for instruction known as Multi Unit School (MUS); a model for developing measurement tools and evaluation procedures; curriculum materials; related statements of instructional objectives; criterion referenced tests and observation schedules; a program for home-school communications; facilitative environments throughout the school system and continuing research and development. Proponents of IGE indicate that the purpose of the organizational component (MUS) is to provide a supportive organizational arrangement for the other six components of IGE. Thus, before one may expect to see significant improvement in an educational program, the MUS component must be functioning in a satisfactory manner.

Despite its seemingly sound conceptual base, little inquiry of an empirical nature had been carried out to support the contention that the IGE model actually produces a more facilitative environment for instruction than that which exists in non-IGE schools. This lack of research was particularly evident when one considers the MUS component which stresses team teaching, differentiated staffing, shared decision making, and open communication patterns.

Implied in the MUS goals of shared decision making and professional autonomy is the suggestion that the principal's influence concerning the management climate of his school might be different from that found in other organizational structures. This hypothesis received some substantiation in one of the first status studies conducted relative to IGE (Pellegrin, 1970). Consequently, many demands might be placed on the principal to modify his leadership behavior (become less of a supervisor and more of a coordinator and resource provider) and

demonstrate receptivity to new ideas and techniques for instruction. Furthermore, it would appear that principals who are more dogmatic and closed-minded would have greater difficulty adjusting to the changing role demands endemic to the MUS structure. This resistance might also affect the school's management climate.

Statement of Significance

Based on the preceding comments, there appeared to be three reasons for examining the IGE model. First of all, it had enjoyed enormous growth both within Connecticut and throughout the nation. Second, IGE offered the first total systems approach to planned organizational change. As such, it presented a comprehensive model which would be compatible to systems analysis. Third, it demanded that the principal play a different leadership role than that expected of a principal in a more traditional setting. A crucial question then was how the principal's leader behavior and personality orientation interacted with the school's organizational structure to influence the school's management climate.

While some studies had attempted to relate principal leadership behavior or interpersonal orientation to school organizational climate, none had examined an interrelationship among these variables by employing multivariate analysis. Furthermore, none viewed climate from a systems perspective that stresses processes interacting between components--a consideration that seemed necessary if most of the complex interacting variables that constitute the dynamics of a given school were to be taken into consideration.

Finally, since a number of schools had been using the IGE system for a year or more, it seemed timely that a comparison be made between a sampling of IGE schools and other schools not employing the IGE model. Through such a study one might compare the dynamics herein discussed as they interacted with school organizational structure.

~~organisational structure~~.

This study was limited to a sample of 59 elementary schools in the State of Connecticut; consequently, its generalizability beyond the population represented is at best tenuous. Second, although approximately forty-five IGE schools and an equal number of randomly selected non-IGE schools were invited to participate in the study actual inclusion was by self selection. Third, since this was an ex post facto study, causal relationships could not be determined. Finally, the study did not fall into the common ex post facto strap of attempting to examine the effect of only one independent variable on a dependent variable; however, it was limited to the examination of several hypotheses. Yet, it might be argued that the addition of more variables would have produced relationships of extreme complexity that would have been very difficult to analyze.

Review of Literature and Related Research

The assumptions that have long been taken at face value concerning direct linear linkages between leadership and such things as group morale, organizational climate and job satisfaction have been extensively examined during the past twenty years. Generally, studies have focused on leadership from a behavioral, psychological or sociological vantage point. Because of the concern of this study, this review focuses on the first two of the approaches mentioned above.

Early studies in leadership behavior dealt with trait analysis. Stogdill, in an extensive review of trait studies, concluded that no identifying characteristics (e.g., height, weight, physique) of leaders across varied situations could be identified (Stogdill, 1943). Lipham noted that attempts to identify "born leaders" by means of personality syndromes or traits had, without exception, failed (Lipham, 1964). Fiorello (1973) concluded that while social skills such as fluency in language, humor, sociability and ambition might be important, their significance varies under different conditions. The general weakness

inherent in most trait studies was that these inquiries neglected the situational context of leadership. Initiated at Ohio State University in 1945, the behavioral approach to leadership emerged as a reaction to the trait analysis studies that were popular in the 30's and 40's. In actuality, the behavioral approach was, at least in the beginning, an atheoretical approach that attempted to focus intently on the specific behavior of leaders and by doing so, gradually develop a valid theoretical base in incremental fashion. In time, two leadership dimensions known as "consideration" and "initiating structure" were identified. In essence, the initiating structure dimension dealt with task achievement while consideration dealt with group maintenance.

These dimensions were found to be somewhat independent but not mutually exclusive. While somewhat contingent on genotypic organizational factors (e.g., school administrators tend to score lower on structure), in a large number of research situations, those leaders who were rated as being affective leaders by their subordinates scored higher in both consideration and structure than leaders who were judged less effective by their subordinates (Halpin, 1969-B). This was true regardless of the institutional setting. Consequently, an underlying assumption related to the LBDQ is that effective leaders do behave in certain predictable ways which can be measured, although their effectiveness as perceived by subordinates is modified by other variables related to different types of organizational settings.

Research related to the behavioral approach has produced important but sometimes conflicting results in relation to leadership behavior and other factors. Many studies have been univariate in nature--that is, they have compared one independent variable (usually leader behavior) against a single dependent variable. Only in the past few years, primarily because of increased use of computers, has statistical analysis begun to reflect the multivariate methods needed

to examine the plethora of variables inherent in "real world" situations.

Despite these limitations, studies have indicated a relationship between leadership and productivity (Gross and Herriot, 1964; Keeler, 1969). Contradictory findings exist relative to linkages between leadership, staff morale, feelings of alienation among staff members, and organizational climate (Keeler, 1963; Adams, 1969). At least one study concluded that because of a tendency among school administrators toward compliance behavior, the leader behavior of school principals is socialized over time as the principal begins to conform to the role expectations demanded by the position (Wiggins, 1971). Finally, there is some evidence that input variables such as socioeconomic status and school size have little effect on leader behavior (Greenfield, 1968).

The primary assumption of the psychological approach to the study of leadership is that a leader brings to any organizational situation certain psychological predispositions that are not significantly altered by the dynamics within that organization. That is, he possesses a certain set of deep-seated belief patterns that cannot be modified. Proponents of this view maintain that what needs to be examined is the true inner personality orientation of the leader which will determine how he will behave regardless of situational variables. One of the predominant psychological approaches has concerned itself with open and closed mindedness and leadership behavior.

Studies addressing themselves to this approach have, for the most part, used the California F Scale or the Rokeach Dogmatism Scale (D scale). The California F Scale developed by Adorno measures conservatism and liberalism in individuals. Rokeach developed the Dogmatism Scale because he maintained that the F Scale is culture-bound. According to Bridges, the Rokeach Scale asks <u>how</u> people believe rather than <u>what</u> they believe (Bridges, 1965). A highly dogmatic

person possesses a closed cognitive predisposition which does not allow him to examine new ideas and concepts on their own merit. The closed-minded individual tends to judge ideas according to their source (Vacchiano, et al., 1969). He also resists new ideas and concepts tending instead to rely on deeply embedded past-beliefs; thus, it would seem that this type person is less amenable to change. Furthermore, he would consider what is being said in terms of who is saying it.

Rokeach has emphasized that dogmatism should not be confused with rigidity. Whereas rigidity is related to resistance to a specific idea, dogmatism is more generalized and is related to a general kind of resistance to all new information (Rokeach, 1960). As Rokeach has stated, "Our general hypothesis is that the more closed a person's belief system as measured by a dogmatism scale, the more resistance he will put up to forming new belief systems." (Rokeach, 1960, p. 181)

A number of studies have been done concerning the relationship between dogmatism and various aspects of leadership. Bridges (1965) indicated that regardless of the principal's personality orientation his perceived supervisory behavior was modified over time. Croft (1964) concluded that leader behavior as perceived by subordinates is related to congruence on the dogmatism scale between the principal and his staff; however, all-in-all, open-minded principals achieved higher leadership scores than did closed-minded ones. Watkins (1966) found a negative relationship between the psychological distance of the principal and aloofness as measured by the OCDQ (Organizational Climate Description Questionnaire)--the researcher questioned the theoretical concepts underlying the constructs of the OCDQ as have Andrews (1965) and Greenfield (1960). Wiggins (1971) concluded that a significant relationship exists between the personality orientation of the principal and school climate. Ehrlich's review (1969) revealed that closed-minded individuals have more trouble accepting new beliefs and profit less from

training. Finally, Gibbs (1968) in a review of research indicated that authoritarianism correlates negatively with leadership scores.

As one can gather from this summary, the state of research related to leadership is still in its rudimentary stages despite conceptual notions that have been offered as valid theory to students in administration for a number of years. As previously mentioned, much of the research has been of a univariate nature which has not attempted to examine the many mediating variables that are always present and which intervene between leadership and whatever dependent variable is being examined. Nor are there simple causal linkages between leadership and other factors. Leadership is only one component operating in conjunction with a number of other dynamics in a complex system.

Therefore, as Greenfield (1968) and Lipham (1964) have suggested, future inquiries must be multivariate in nature and concerned with leadership as one interacting process that is involved in a complex system. The researcher must also examine these processes in different organizational settings since the basic structure of the organization modifies the leadership dynamics within it. It is toward such a systems approach to organizational research that this review now turns.

Organizational structures should be such that they facilitate the integration of the needs of the individual with those of the organization. There is probably no one best structure for all organizatons. The goals of the organization, the processes needed to reach these goals and environmental inputs determine what structure is most appropriate. Although most school systems, at least until fairly recently, were bureaucratic in nature, individual teachers within the confines of their classrooms were granted a great deal of autonomy (Bidwell, 1965). Recently, attempts have been made to modify this structure by integrating teachers into teams of small interdependent work groups.

Most of the theoretical rationale underlying such organizational change emanates from philosophical considerations about the nature of man and his work (McGregor's theory X and theory Y), the need for psychological satisfaction from participation in the organization (Maslow's hierarchy of needs) and attempts to integrate the personal needs of the individual with the achievement of the organization's goals (Getzels-Guba social systems theory). Although planned organizational change based on these concepts has been utilized in industry, until recently the concept of planned change in the organizational structure of schools was virtually unknown.

Specifically, the MUS concept is predicated on the following assumptions. Teachers are professionals, and as such are qualified to determine the best procedures and processes for bringing about educational growth. The organizational arrangement should be such that it reinforces the teacher's role by securing the commitment of teachers to the goals and policies of the school system. Decentralization of decision making will increase motivation and productivity. The administration must coordinate the various components of the system so that they function in an integrated and a systematic fashion. It is with this last concept that the next section of this review is concerned.

During the past few years, an increasing number of writers have stressed systems theory as providing a more comprehensive approach to examining organizations. By definition "... a system is an integrated assembly of interacting elements, designed to carry out cooperatively a predetermined function." (Banghart, 1969, p. 21). systems theorists insist that the only way "... one understands the entire operating system is by carefully examining the component parts which make up the system" (Banghart, 1969, p. 21).

An important concept in systems theory relates to the fact that changes

in one component of the system will affect dynamics and other components within the system. However, changing one component in the system (e.g., implementing a new reading program) will not be effective unless there is appropriate change in other dynamics and components (e.g., role behavior and staffing patterns) that are needed to facilitate the new program.

As Miles (1965) has indicated, the "special properties" of school systems differentiate them from other organizations. Because it is so difficult to measure output, goal ambiguity is inherent in school systems. Furthermore, public schools must take all children who come to them and thus have no jurisdiction over the clients that are processed through the system. Since classrooms are the "production units," it is difficult to assess what goes on inside; students themselves usually have the best idea of what is occurring, but they are seldom allowed to speak. There is extremely low interdependence among staff members in traditionally staffed schools; teacher A and teacher B seldom interact professionally nor does the performance of one influence that of the other. Since all taxpayers are "stockholders" in the schools, the administration and staff are vulnerable to criticism from many quarters. Lay-professional control problems are dealt with by laymen on the board of education who have little real understanding of educational administration. Finally, there is low investment in technology, equipment, and research.

Until recently, no planned organizational change based on systems concepts had ever been employed to bring about changes relative to the characteristics described above. The IGE model employing the MUS organizational structure component was one of the first such attempts to bring improved organizational "health" to school systems. However, little research based on systems concepts has been done in school organizations perhaps because most schools employed similar organizational structures. Most studies have focused on some narrow

subcomponent and have examined simple univariate relationships which do not reflect the systems nature of the real world.

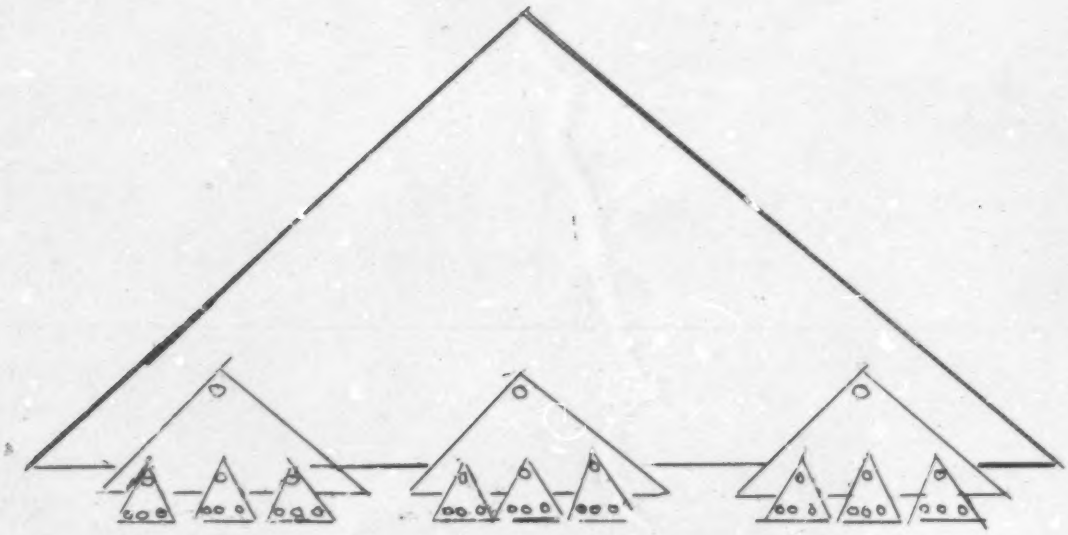
Systems theory supplied the researcher with a comprehensive model. As Griffiths (1964, p. 118) states:

> System theory is the result of an attempt to develop a general theory which enables the researcher to describe, explain and predict a wide range of human behavior within organizations. It deals with conflict, motivation and decision making...it represent(s) the direction in which theoreticians might move in the coming years.

One of the better-known models which views organizational characteristics from a systems perspective is that developed by Rensis Likert. Although well-known in industrial research, Likert's concepts have only recently been used to analyze educational systems. Likert's theory is sometimes referred to as an interaction influence theory which is primarily concerned with integrating human needs with those of the organization. Likert stresses the following points as being indicative of management dynamics in the human organization. Through decentralization and dynamics related to the following processes, motivation is increased. Goal setting is a function of each work group and based on group decision. Communication is two-way and both lateral and vertical in nature. Open communication is encouraged so that the system has constant and accurate feedback. Decisions are "validated" by securing a commitment from each individual in the working group. Groups, not individuals, make decisions. Work groups are interdependent and interactive; they do not function as isolated components within the organization. Non-economic motives dealing with psychological satisfaction and feelings of support are developed. The primary concern of the leader is to insure that each member experiences support and a sense of worth according to his own background, values and expectations. The structuring of the working situation is of crucial importance.

Likert maintains that the optimal type of structure for many organizations

is based on what he terms the "linking pin theory" portrayed in the following diagram.



(The arrows indicate the linking-pin Function)

(Likert, 1967, p. 50)

According to the model, each work group is linked to all others by some member who holds overlapping membership in more than one group. Likert emphasizes that the system is not to be confused with a committee approach to problem solving; each person who serves in a "linking pin" position is responsible for the performance of his group. According to Likert, communication channels are of both a vertical and horizontal nature; members at all levels of the organization are involved in decision making. Interaction between groups is facilitated, and the worker feels he has control and influence within the organization. This leads to a greater feeling of support and self-actualization which, in turn, produces a stronger commitment on the part of the individual toward the

goals of the organization. Because he is truly involved in decision making, interaction and goal setting, the values and goals of the group are reflective of the individual's own needs--thus the ideographic and nomothetic dimensions are integrated. Since the emphasis is on the group rather than the individual the pressure for performance emanates from the work group which maintains a healthy equilibrium because of the accurate and rapid feedback provided by group members.

Likert maintains that the component parts of the organization must be operating in harmony with the human needs of the members and those clients served by it. The model locates organizations on a continuum described by one of four management systems:

System I: Exploitive Authoritative - Formal hierarchical structure, pressure to conform, decisions made at the top, people must be forced to work, punative climate, communication flows downward.

System II: Benevolent Authoritative - Hierarchical, a little less coercion than System I, persons allowed to make "token" decisions, paternal leadership, basic needs of workers concerning economic and safety needs are met, communication mostly downward.

System III: Consultive - Structure less-pyramided, members are consulted but do not have final authority, some attempt made to satisfy higher needs of workers related to autonomy and self esteem, communication both upward and downward.

System IV: Participative Group - Organic structure - interaction based on linking pin concepts, every attempt made to integrate the needs of the individual with those of the organization, individuals involved in important decisions and policy making, attempts to satisfy higher emotional needs of esteem and self actualization, communication flows freely in all directions allowing system to adapt quickly.

Theoretically, as an organization begins to implement the principles espoused by Likert, it will begin to move toward the Participative Group system delineated in system IV. Likert believes that the causal variables dealing with leadership, management philosophy and organizational structure must change first. He views these as independent variables that management can control. Furthermore, they all must change if a significant impact is to be made on other components in the system.

Once these are modified, the intervening variables dealing with loyalties, attitudes, motivation and potential for interaction will be modified. Likert stresses that there is a time lag of twelve to eighteen months between the implementation of factors dealing with causal variables and any evidence of significant changes in intervening variables (i.e., communication, decision making, goal setting, integration).

In time, end result variables dealing with output and productivity will increase. Although such factors may be difficult to assess in school situations, Likert has applied his model to school organizations. Recently researchers have investigated school organization using the Likert evaluation instruments.

A number of doctoral dissertations have indicated "... that system IV is as effective in educational institutions as it is in business organizations." (R. Likert, Undated mimeo) Carr found that more involvement in decision making led to higher job satisfaction on the part of teachers. Sister Mary Lauretta concluded there was better communication in all directions when principal behavior was viewed as more supportive and a school moved closer to system four. Gibson indicated that children achieve better in system four schools regardles of socio-economic status. Roedel had central office people rate schools for excellence

in a large California school district. He discovered that those rated in the upper quartile by central office evaluators were more toward system four than those rated in the lowest quartile which were more toward system two. Miller found that as schools moved toward system four, there was higher motivation on the part of teachers and students, a more favorable attitude toward the school and a greater commitment to it, less frustration, more confidence and trust and better communication. Bernhardt indicated that schools oriented toward system four had fewer strikes and less teacher militancy than those that were more toward system two. Throop found that principals perceived their schools to be more toward system four than did subordinates. Feitler and Blumberg indicated as schools moved more toward system four over a seventeen month period, teachers in those schools became more involved with the needs of students and of parents.

Thus, it appears from the studies discussed above that the Likert evaluation instrument has validity for use in school studies. Yet, none of the school systems investigated, in all probability, actually used the concept of the linking pin organizational structure to bring about planned organizational change. The reader recalls that Likert emphasizes that any approach to organizational change cannot be piecemeal nor segmental; it must be predicated on systems concepts.

Over the last five years, such a systems approach to organizational change has been implemented in a number of elementary schools in this country. This systems approach is known as Individually Guided Education. It is remarkable how similar the concepts underlying the organizational structure in IGE school systems resembles the linking pin structural arrangements advocated by Likert.

According to proponents, IGE is a total systems approach which attempts to adapt the system to meet the needs of each child. "... IGE supporters claim

that it is a total system of elementary education ... one concerned first with changing the organization for instruction and the related staffing patterns so that instructional improvements can more readily occur." (National School Public Relations Association, 1972, p. 5) While a number of non-IGE schools have attempted to implement some of these concepts (e.g., differentiated staffing, individualized instruction), IGE advocates indicate that such attempts have been fragmented in nature and have been concerned with only a few dynamics within the system.

However, it is not a simple matter to uproot teachers from their traditional classroom situations and ask them to interact on a team basis with other members of the staff. Charters has stated that there are many problems related to the

> ... idea of converting the technical system of the school, to use Parson's (1960) term from one in which the school's central tasks are performed by largely independent, isolated teachers to a system in which the tasks are carried out by small closely interdependent work groups. Organizational theory, small group theory and general sociological theory all suggest that ... such a conversion would profoundly alter the character of the teaching occupation and the American public school. (Charters, 1973, p. 4)

Obviously, IGE is not just another pilot program that may be attempted and then cast aside with relative ease because, as Miles has indicated, most programs deal with "figure" while organizations themselves have remained the "ground" and have not been changed (Miles, 1965). Prior to IGE, changes had not been concerned with changing the total structure of the school's organizational patterns. To understand the comprehensiveness of such a change, one must examine the organizational structure of the MUS model.

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Insert Figure 1 about here

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Figure 1 attempts to tie MUS concepts to Likert's linking pin model. Each teaching team of approximately five teachers plus paraprofessionals, aides and supportive specialists is linked to the school's Instructional Improvement Committee by the unit leader. It is the function of the IIC to aid in the management of the school by formulating curriculum and making decisions concerning the operation of the school. Each staff member also participates in decision making because it is the responsibility of the unit leader to reflect the feelings and concerns of the unit during IIC meetings. There is also a System Wide Policy Committee composed of central office personnel, principals, unit leaders and teachers whose function is to develop policies for the school system as a whole. In addition (although not indicated in Figure 1), each IGE school is a member of an IGE league composed of IGE schools from a general geographic area. Finally, there is a state-wide coordinators group which attempts to integrate the efforts of all IGE schools in a state.

Klausmeier has indicated that MUS resulted from a "synthesis of theory" and stresses "... horizontal and vertical organization for instruction, role differentiation, shared decision making by groups, open communication and administrative and instructional accountability...." (Kluasmeier, 1971-A, p. 20) Obviously, it emphasizes many of the characteristics advocated in relation to optimal organizational structure described earlier in this paper. It also reflects the overlapping membership, supportive environment and group responsibility advocated by Likert. Thus, it would appear probable that IGE schools which had been utilizing the MUS model for at least a year should be progressing toward Likert's participative climate described in system IV and should display this "facilitative environment" when compared with schools which had remained unchanged in structure. The answer to this question was one of the central concerns of

this study.

The second major focus of this study dealt with the leadership behavior of the principal as he was expected to conform to different leader behavior expectations from those found in more traditional settings. The IGE principal must be more of a coordinator among professionals than an autocratic leader. He has the responsibility to provide information and resources while helping the IIC make policy decisions concerning the operation of the school. In Likert's terms, he must create the supportive environment necessary for the proper functioning of the IGE model. It seems this new role might create a strain on principals who are accustomed to "running their own ship."

Despite IGE's seemingly sound theoretical base, little research had been done to determine whether or not IGE schools do in fact exhibit a more facilitative climate than their more traditional counterparts, nor had the leadership role of the principals in IGE schools been clarified.

Perhaps the best known study was one carried out by Pellegrin (1970) who indicated that there was better communication, more shared decision making, and a changed influence pattern in IGE schools. However, it is important to note that Pellegrin's sample consisted of only six schools and was a status study not based on any rigorous research design. Richardson (1973) found that the behavior of principals implementing IGE programs did not change significantly; however, he concluded, as did Jones, that there was a problem for the principal in adapting to his new role (Jones, 1973). From these findings, one may conclude the leadership influence of the principal in IGE settings was in need of inquiry.

As Klausmeier has indicated, "research is needed on administrative arrangements ... unless additional knowledge in the form of principles, theories, or

systems accrues at a rapid pace during the 1970's, IGE will likely not be a robust system for the 1980's." (Klausmeier, 1971-A, pp. 29-30) Charters has synthesized the problems as succinctly as anyone:

> ... early events shape and constrain the course of succeeding events; needed is a systematic view of organizations, meaning that alterations in functions of one component have discernable and surprising effects on other components; a behavioral view of educational progress, arguing that structural changes in schools are insufficient for defining innovation if they are not accompanied by appropriate changes in role behavior and interpersonal relationships; and a number of more substantive conceptualizations as well ... new staff utilization plans at the national level have occurred largely in the absence of systematic research. (Charters, 1973, p. 3)

Thus the interaction between any innovation and the receiving organization structure must be examined empirically before any excathedra pronouncements may be made concerning success. Giacquinta and Bidwell have stated:

> Moreover confidence is not warranted in a number of currently held generalizations about organizational change because the research methods and statistics on which they are based are inadequate ... the extension of knowledge about organizational change will require empirical studies of greater theoretical methodological and statistical sophistication .... Grossly underemployed, however, and often ignored is the difficulty of effecting changes in people's basic values attitudes and behavior.... (Giacquinta and Bidwell, 1973, p. 178)

Giacquinta's comments appeared particularly appropriate for this study. What kinds of changes had actually occurred in some of the organizational dynamics of schools because of the implementation of the MUS organizational component of the IGE model? Had MUS actually brought about a more facilitative climate for educational instruction? Furthermore, how had the change in staffing patterns and other organizational arrangements modified the perceived leader behavior of school principals? Finally, did the personality orientation of the principal relative to his openness and receptivity to new ideas influence his ability to adapt to the demands of new and more flexible role behavior? This inquiry was concerned with the relationships between these factors.

Study Design

This study was an ex post facto field study that examined the main and interactive relationships among three independent variables and one dependent variable. The three independent variables were school organizational structure, leader behavior of the principal, and personality orientation of the principal. The dependent variable was school management climate. The general hypothesis expressed in substantive terms was that school organizational structure, leader behavior of the principal and personality orientation of the principal would be significantly correlated with school management climate.

The independent variable dealing with the organizational structure of the school was dichotimized according to whether or not a school was IGE or non-IGE. IGE schools were defined as those which had adopted the MUS organizational component as delineated in the Wisconsin model and were members of one of the three IGE leagues in Connecticut. Non-IGE schools were all other schools which had not adopted the MUS component of the Wisconsin model. While some of these schools might have been using some concepts employed in the IGE model, such as non-gradedness, none was using the MUS organizational component which was the focus of this study.

The leader behavior of the principal was defined as the frequency of certain behaviors characteristic of effective leaders as measured by total score obtained on the Leader Behavior Description Questionnaire, Form XII. The average reliability for the twelve subscales is .75. Subscale correlations were derived from a modified Kuder-Richardson formula (Stogdill, 1963, pp. 9-10). Items are scored on a 5 point scale. The LBDQ includes twelve subscales defined as follows:

1. Representation - The leader speaks and acts as the representative of the

group. 2. Demand Reconciliation - The leader reconciles conflicting demands and reduces disorder within the system. 3. Tolerance of Uncertainty - The leader is able to tolerate uncertainty and postponement of plans without anxiety or upset. 4. Persuasiveness - The leader uses persuasion and argument effectively; he exhibits strong convictions. 5. Initiation of Structure - The leader clearly defines his own role and lets others know what is expected. 6. Tolerance of Freedom - The leader allows followers scope for initiative, decisions and action. 7. Role Assumption - The leader actively exercises his leadership role rather than surrendering leadership to others. 8. Consideration - The leader regards the comfort, well-being, status and contribution of followers. 9. Production Emphasis - The leader applies pressure for productive output. 10. Predictive Accuracy - The leader exhibits foresight and ability to predict outcomes accurately. 11. Integration - The leader maintains a closely-knit organization; he resolves intermember conflicts. 12. Superior Orientation - The leader maintains cordial relations with superiors; he has influence with them, he is striving for higher status.

The interpersonality orientation of the principal was determined through use of the Rokeach Dogmatism Scale, an unobtrusive instrument consisting of 40 statements which are scored on a six-point scale. A reliability range of .68 to .93 has been established using split-half reliability methods corrected by the Spearman Brown formula (Rokeach, 1960, p. 89).

The school's management climate was indicated by use of Likert's Profile of Organizational Characteristics. The instrument, modified slightly for this study, consisted of 43 items scored from 1.0 to 5.0 on a Likert type scale. Subscales dealt with the following processes: Leadership, Motivation, Communication, Interaction, Decision Making, and Goal Setting. A mean score derived

from the 6 subscales indicated which management system a school was utilizing. Split half corrected reliabilities of .97 and .99 have been obtained (Likert, 1967, p. 127).

The following null hypotheses were examined:

$H_0 1$ There is no relationship between school organizational structure and school management climate.

$H_0 2$ There is no relationship between principal personality orientation and school management climate.

$H_0 3$ There is no relationship between principal leader behavior and school management climate.

$H_0 4$ There is no relationship between school organizational structure, principal personality orientation and school management climate.

$H_0 5$ There is no relationship between school organizational structure, principal leader behavior and school management climate.

$H_0 6$ There is no relationship between principal personality orientation, principal leader behavior and school management climate.

$H_0 7$ There is no relationship between school organizational structure, principal personality orientation, principal leader behavior and school management climate.

Serendipity relationships between subscales on the LBDQ and the profile of organizational characteristics were also examined.

Population and Methodology

The sample consisted of 59 elementary schools in the State of Connecticut. Forty-six Individually Guided Education Schools and 43 randomly selected non-IGE schools were invited to participate. Of the 39 IGE schools that accepted the invitation, 34 supplied usable data. Of the 33 non-IGE schools that accepted the invitation, 25 supplied usable data. Data was considered usable if 50% of the teachers randomly selected from a given school returned questionnaires. Fifty percent of the staff members in IGE schools were randomly selected to receive

questionnaires while 67 percent of the staff members in non-IGE schools were randomly chosen. The LBDQ was answered by 587 respondents; 588 answered the Likert instrument and 61 principals answered the Rokeach Dogmatism Scale. The overall rate of return for all instruments was 83%. Materials were delivered to the schools by the researcher and collected one week later.

Statistical Application

Main effect hypotheses were analyzed by examining the significance of simple correlations. First and second order interactions were analyzed through use of stepwise linear multiple regression. Hypotheses were rejected at the .05 level of significance. Auxiliary data derived from the subscale was examined by using the same methods. Means and standard deviations were also calculated to aid in explanation.

Discussion of Results

Hypothesis 1: The Relationship between School Organizational Structure and School Management Climate.

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Insert Figure 2 about here

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Figure 2 indicates the four types of climates identified by Likert and portrays the profiles for IGE and non-IGE schools in this study. Obviously, there is very little difference between IGE and non-IGE schools relative to any of the organizational processes.

However, it should be noted that a mean of 3.5 on the Likert scale is indicative of a consultive climate which in and of itself reflects a fairly healthy environment for supporting educational programs. However, the primary reason for initiating the MUS organizational component is to bring about a truly participative climate reflected by System IV on the Likert instrument. Thus, it

appears that the MUS component is not moving IGE schools toward stated goals of improved communication, dispersed decision making, improved interaction, and teacher involvement in goal setting and decision making. Schools that had been employing MUS for two years did not display higher climates than schools that had been employing MUS for one year.

It is worthy of note that three of the four schools receiving the highest climate scores of 3.8 were IGE schools whereas the three lowest scores (3.0) were received by non-IGE schools. Therefore, other variables should be examined to ascertain what these three high scoring IGE schools have in common. There may be other factors that contribute to the success of the MUS component that were not examined in this study.

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Insert Table I about here

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Table I displays the results of the stepwise linear multiple regression analysis employed in this study. There was no significant relationship between organizational structure and school climate ($r = -.0261$). This is a revealing but not inexplicable phenomenon. As mentioned earlier, until recently schools have exhibited a loose bureaucratic structure. Teachers have enjoyed a fairly wide degree of autonomy within their own classrooms which they viewed as their proper domain. While not involved in school-wide decision matters, they often have been able to make many unilateral decisions concerning such things as teaching methods and lesson plans. It appears that they have enjoyed the autonomy of the classroom and have been fairly content operating within these parameters.

Yet, organizational theorists have argued that schools would be more effective and exhibit a more professional atmosphere if integrative structures (based on teaming, dispersed decision making and open communication patterns)

were established. Motivation would increase as would job satisfaction and efficiency.

The first presumption in such an approach is that schools should be structured in an organic rather than bureaucratic manner because such a structure would enable an organization to meet rapidly changing demands from its environment. Such a structuring is also predicated on the concept that teachers are professional persons who are well able to make decisions relative to serving their students. It seems that the essence of the problem relates to whether or not differentiated staffing and overlapping memberships in both school and system-wide committees will enable teachers to become more involved in decision making and, furthermore, whether or not they see the need for becoming involved. Obviously teachers and principals must understand the need for such a change and, furthermore, be committed to it. Perhaps the decision to implement the MUS component does not always emanate from the teachers themselves. Although they supposedly make the decision, in actuality it may be initiated by either central office personnel or the school principal. Thus, the innovation is at a disadvantage before it starts because it has not been validated by those who will develop it. Serendipity data gathered in conjunction with this study revealed that there is a significant correlation between teacher involvement in the decision to implement IGE and school climate ($r = .3713$: $p<.05$).

There is little doubt in this researcher's mind that the MUS model is based on sound philosophical, psychological and organizational concepts. However, it is a massive undertaking that requires an uprooting of teachers from their classrooms. It not only demands changes in behavior but also in attitudes and values. To expect these last two deepseated psychological factors to change in one or two years is naive even if people are committed to such a change;

to expect them to change in ten years if people are not convinced of the necessity for change is futile.

Consequently, IGE must be given time to produce its facilitative climate. To condemn it now would simply reinforce the criticisms voiced about educational organizations; that they try a new innovation which they do not completely understand, give it little support in way of money, research, and personnel, examine it at the end of a year or two, conclude that it is a failure and turn to some new "panacea."

The third reason for the apparent inability of IGE schools to display a more facilitative environment relates to concepts involved in planned organizational change. Although it is not difficult to implement the MUS staff structure, it is extremely difficult to provide the supportive process necessary to make it work. One does not simply "plug in" MUS and assume that it will function without support; such an approach leads to organizational drift rather than organizational development.

After analyzing the data from this study, it appears that two quotations cited earlier have a prophetic ring: "... structural changes in schools are insufficient for defining innovation if they are not accompanied by appropriate changes in role behavior and interpersonal relationships." (Charters, 1973, p. 3) And, in relation to concepts involving organizational change, "... Grossly underemployed, however, and often ignored is the difficulty of effecting changes in people's basic values, attitudes and behavior...." (Giacquinta and Bidwell, 1973, p. 178) Therefore the failure of IGE to bring about a more facilitative climate may be due to "adoptive" rather than a "substantive" failure.

Furthermore, the support system provided for IGE schools demands careful scrutiny before one can malign the theoretical validity of the MUS component. Is the central office philosophically politically and economically committed to

the success of IGE? Is there a district-wide policy committee which includes teachers that actually have a voice in policy formulation? Is there an IGE league for member schools that is serving as a coordinating vehicle for providing information and exchanging resources among member schools? Are principals and teachers committed to IGE concepts and have they actually had a voice in accepting the implementation of IGE? Furthermore, do they fully understand what they are trying to do?

In a discussion concerning administrative assumptions underlying differentiated staffing Pellegrin indicated that "... few teachers have the time, motivation, technical knowledge or managerial skills...." to implement and develop new working patterns and divisions of labor. (Pellegrin, 1973, p. 31) It appears that in a number of schools the principal is left to develop some type of program concerned with staff development. However, principals are not usually experts in management technology with understanding of how to modify work behaviors to fit new staffing patterns. Furthermore, at the present time, there are few adequate training programs either of a pre-service or in-service nature to help train administrators, unit leaders and teachers to work in IGE schools. It is time for IGE proponents to focus on the implementation problems associated with the IGE model. These implementation barriers are not insurmountable. Sources of help from management science and industrial psychology can be utilized. Finally, universities must provide the resources and expertise necessary to help schools negotiate the difficult transition from traditional staffing to the MUS model.

Hypothesis 2: The Relationship Between Leader Behavior of the Principal and School Management Climate.

The overall leader behavior of the principal correlates significantly with school climate ($r = .4784$). The significant relationship between leader behavior

and school climate is important in and of itself. If such behavior accounts for 21 percent (corrected r^2) of the variance of school climate, and if one accepts climate as a mediating variable which in turn influences productivity, then certainly leader behavior of the principal may be considered an important component of organizational performance regardless of whether the school is an IGE or non-IGE school.

Furthermore, specific types of leader behavior correlate to a greater degree with school climate than do others.

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Insert Table II about here

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If (as some theorists contend) leadership is contingent on situational conditions, it is important to scrutinize the constructs of leader behavior that appear appropriate in elementary school settings, regardless of the staffing patterns that may be employed.

The following statements are based on high correlations between subscales on the LBDQ and the Likert questionnaire.

In elementary school situations an emphasis on productive output by the principal does not display a positive relationship with consultive climate scores ($r = .0333$). Nor do his efforts to please superiors relate to a more facilitative educational environment ($r = .1237$).

Of the two central constructs underlying the subscales on the LBDQ, Initiating Structure ($r = .1388$) and Consideration ($r = .5489$), the consideration dimension dealing with group maintenance seems of more importance in elementary school settings. Three subscales which correlate with the "initiating structure" dimension (representation, role assumption, and production emphasis) do not correlate highly with climate. Therefore, it is suggested that principals who

are oriented more toward the ideographic needs of individuals are able to produce a more facilitative educational climate in elementary schools than those administrators who are more concerned with the nomothetic dimension oriented toward achieving the goals of the organization.

Five subscales displayed significant correlations ($p<.01$) with management climate. The highest correlation (.5527) was between the integration subscale and school climate. A principal with a high integration score maintains a closely knit organization and resolves intermember conflicts.

The second highest correlation (.5469) was between the consideration subscale and school climate. A consideration-oriented principal regards the comfort, well being, status and contributions of followers.

The third highest correlation (.4880) was between the tolerance of freedom subscale and school climate. A principal who is oriented toward tolerance of freedom allows followers latitude for initiative, decision making and action.

The fourth highest subscale correlation (.4774) was between the demand reconciliation subscale and school climate. A principal who scores high on this subscale reconciles conflicting demands made by subordinates and reduces disorder within the school;

The fifth highest correlation (.4609) was between the predictive accuracy subscale and school climate. A high score on this subscale indicates a principal who exhibits foresight and is able to predict outcomes accurately.

Further analysis relates to the lessened influence of the principal in IGE settings. In IGE schools the leader behavior of the principal correlated .4102 with school management climate; whereas in non-IGE schools the correlation was .5783. Although not significant (Fisher.Z), the difference is worthy of note. There appears to be an indication that the leader behavior of IGE principals is less of a factor influencing school climate than is the leader behavior of principals in non-IGE schools.

The lessened influence of the principal may be due to the fact that unit leaders are expected to assume some of the leadership functions formerly carried out by the principal. (Singe, 1974)

The fact that school administrators score higher on the consideration dimensions supports the earlier investigations of Halpin (1969). This seems to indicate that persons who are more consideration oriented are either attracted to or rewarded with positions as elementary principals. If open minded principals are more consideration oriented (the correlation between dogmatism and consideration was -.0126 in this study), then this might help explain the low mean dogmatism score for all elementary principals in this study.

A second possibility is that principals are socialized by their positions and exhibit the kinds of behavior they feel will be effective in their particular organizational setting. If compliance behavior is rewarded in educational settings, as Wiggins (1973) indicates, then the administrator in an elementary school setting might find it much less risky to emphasize human considerations rather than behavior oriented toward production emphasis. Perhaps the principal has learned that teachers do not respond well to someone who is production oriented and attempts to upset the equilibrium in the system.

Summarizing, a significant linear relationship exists between the principal's leader behavior and school climate. (The application of polynomial regression equations revealed that the correlation was not curvilinear.) Furthermore, certain types of leader behavior are more highly correlated with school climate than are others. Principals who are able to solve conflicts between staff members; who are considerate and show appreciation for efforts of teachers and who allow teachers freedom and latitude to make decisions and initiate their own

innovations achieve higher climate scores than principals who do not exhibit these behaviors. Principal behavior oriented toward higher production or willingness to serve as group spokesman does not correlate with climate scores.

Hypothesis 3: There is no Relationship Between the Personality Orientation of the Principal and School Management Climate.

There was no significant correlation between the personality orientation of the principal and school climate. Surprisingly, dogmatism correlated positively with school climate ($r = .1636$). Furthermore, a dichotomy existed between IGE and non-IGE schools relative to this relationship. The correlation between dogmatism and climate was .2261 for IGE schools but only .0940 for non-IGE schools. It is difficult to surmise why there is a correlation between dogmatism and school climate. Perhaps elementary teachers do respond well to an opinionated leader who is slightly closed minded and appears sure of himself.

However, principals as a group scored rather low on the Dogmatism Scale. The mean for all principals was 121 on a scale that ranged from 40 to 280. One might conclude that the elementary principals examined in this study are quite open minded when compared with other groups of respondents who have taken the Rokeach instrument (average mean = 151). And thus their dogmatic tendencies were not high enough to have any impact on school climate.

Another explanation relates to the conclusions of Bridges. Educational organizations reward compliance behavior. Consequently, individuals who are able to exhibit such behavior often become principals. Furthermore, once in the position, a principal's behavior is socialized over time. Whatever dogmatic predispositions he may have are suppressed, and he exhibits behavior that his role demands. Thus, psychological predisposition of the leader has no apparent direct linkage with school organizational climate. Subordinates do not see such psychological mind sets; they observe only behavior which is

modified to meet role expectations. The elementary school administrator does not reveal his dogmatic tendencies which (at least relative to the group of principals in this study) are not high to begin with.

Hypotheses 4-7: The hypotheses dealing with three first and one second order interactions are statistically significant (Table I), but spurious. The study exemplifies the need for caution in interpreting data analyzed by multiple regression. Statistical significance does not necessarily indicate theoretical meaningfulness nor construct validity.

For instance, the leader behavior of the principal correlates highly (r = .4784) with school climate. When the personality orientation of the principal (which also correlates slightly, r = .1636 with school climate) is added to the regression equation the combined correlation of the two independent or predictor variables with the dependent variable, school climate is R = .5006.

The addition of the third independent variable, school organizational structure, adds almost nothing to the multiple regression equation (R = .5023). The reader will note that the magnitude of the relationship (indicated by F) actually diminishes as the second and third independent variables are added to the regression equation. However, F continues to remain significant at the .01 level although it drops from F = 16.92575638 to F = 6.18676890.

Thus, it may be seen that the leader behavior of the principal is contributing significantly to the variance of the school's management climate. However, the other two independent variables (school organizational structure and personality orientation of the principal) are not.

Thus, although the last four null hypotheses concerning the interactive effects of the three independent variables with the dependent variable are statistically rejected, one can see that the rejection is due largely to the variance contributed to school climate by the leader behavior of the principal (21%).

The second independent variable, personality orientation of the principal, contributes less than 2 percent of the variance. MUS organizational structures make a negligible contribution.

Conclusions

There was no significant relationship between school organizational structure and school management climate. IGE schools did not display more facilitative climates than did non-IGE schools. However, the 59 elementary schools in the study fell within the consultive or System III range on the Likert instrument. Thus, all elementary schools examined displayed fairly "healthy" climates.

There was a significant relationship ($p<.01$) between the leader behavior of the principal and school management climate. Leader behavior of the principal accounted for approximately 21 percent of the variance in school management climate. There was a lower relationship (although still significant at ($p<.01$ level) between leader behavior of the principal in IGE schools than in non-IGE school.

There was a positive but not significant relationship between dogmatism and school management climate. However, most of the elementary principals in this study exhibited low dogmatism scores.

While all second and third order interactions were statistically significant at the .01 level, such significance was due largely to the correlation between leader behavior and school climate. Thus, dogmatism and organizational structure accounted for only about two percent of the variance identified relative to school management climate. Therefore, although four of seven hypotheses were rejected statistically, only the hypotheses related to leader behavior and school management climate was considered meaningful relative to construct validity.

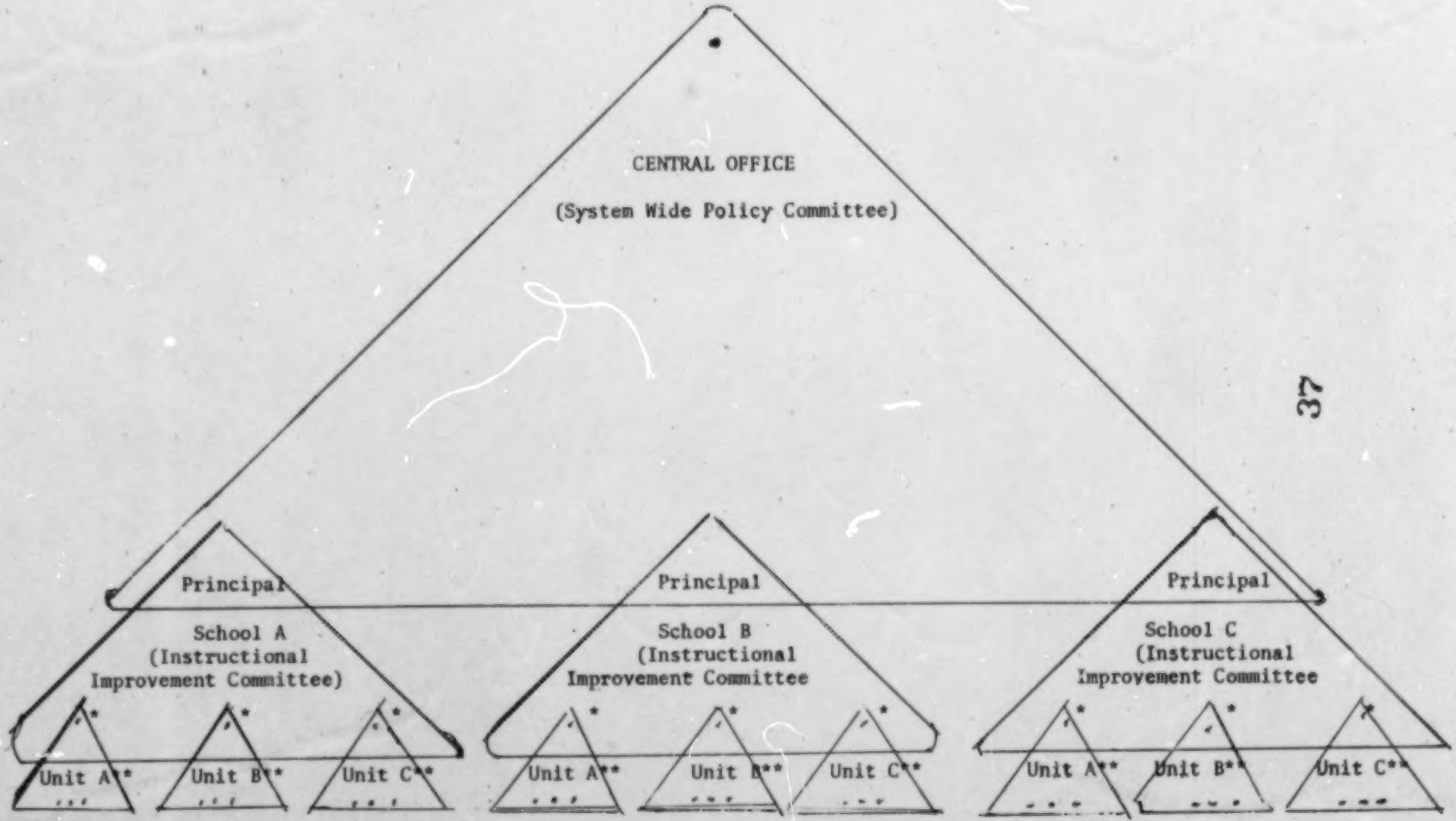
Educational or Scientific Importance of the Study

Despite claims to the contrary, the MUS component of the IGE model does not seem to be producing more facilitative educational climates. Yet, it is the opinion of the researcher that the failure is an "adoptive" rather than a "substantive" one. Schools seem to have little appreciation for concepts related to team building and principles of organizational development that are necessary if the MUS concept is to be operative. Furthermore, it appears that the leader behavior of the principal in the IGE schools has less of a bearing on school climate than in non-IGE schools. Despite its phenomenal growth, if IGE supporters do not deal with the problems revealed in this study, IGE may not maintain its popularity in the eyes of educational administrators.

Figure 1

Schematic Representation of a School System

Employing the MUS Organizational Model



*Unit Leaders

**All dots in this row represent teachers

Figure 2

Profile of IGE and Non-IGE Schools on Subscales

Of The Likert Questionnaire

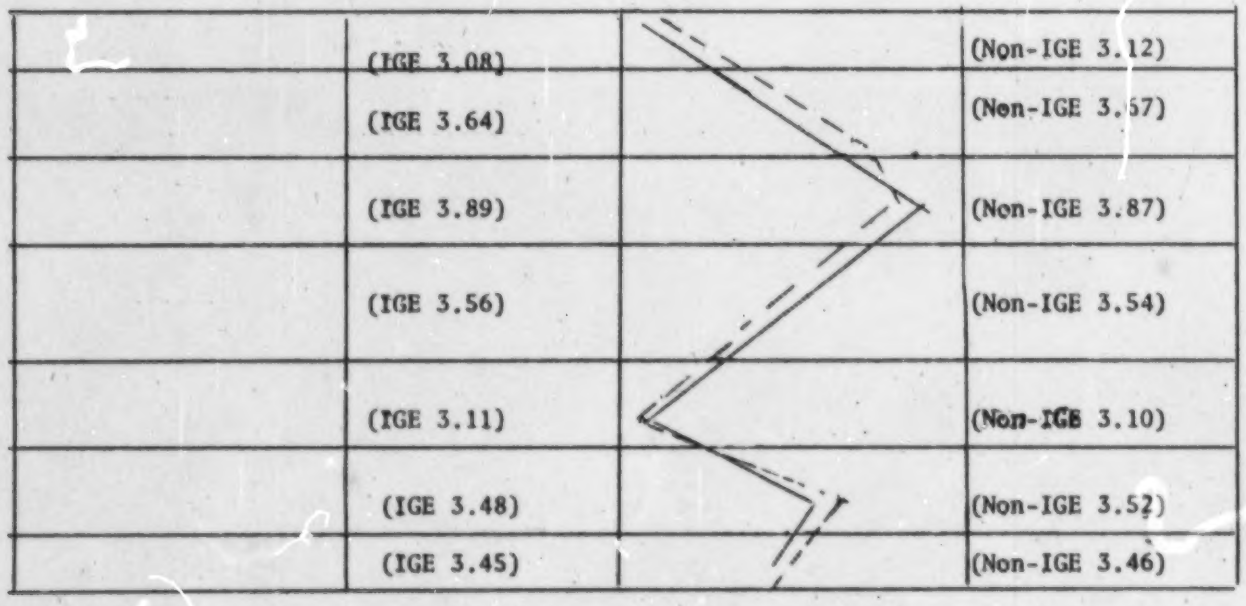


TABLE I

STEPWISE MULTIPLE REGRESSION ANALYSIS. ALL SCHOOLS ALL VARIABLES INCLUDED

CORRELATIONS

	PERSONALITY ORIENTATION	ORGANIZATIONAL STRUCTURE	SCHOOL CLIMATE	MEANS	STANDARD DEVIATIONS
Leader Behavior	0346	-1624	4784	360.3220	22.35176509
Personality Orientation		0704	1636	121.0338	26.95732579
Organizational Structure			-0261	0.57627118	0.49839016
School Management Climate				3.46271186	0.17508451

N = 59 Schools

MULT R	SE EST	DF	F	VAR	BETA	SE BETA
0.00	0.18	58	0.00	School Climate		
		LEADER BEHAVIOR INCLUDED				
0.48	0.16	57	16.93**	Leader Behav.	0.48	0.12
				School Climate		
		PERSONALITY ORIENTATION INCLUDED				
0.50	0.15	56	9.36**	Leader Behav.	0.47	0.12
				Person. Orient.	0.15	0.12
				School Climate		
		ORGANIZATIONAL STRUCTURE INCLUDED				
0.50	0.16	55	6.19**	Leader Behav.	0.48	0.12
				Person. Orient.	0.14	0.12
				Organ. Struc.	0.04	0.12
				School Climate		

** = Significant at ($p<.01$)

TABLE II

CORRELATIONS, MEANS AND STANDARD DEVIATIONS BETWEEN SUBSCALES

OF LBDQ AND LIKERT CLIMATE QUESTIONNAIRE

ANALYSIS-STEPWISE-N=59 SCHOOLS, CORRELATIONS, MEANS, STANDARD DEVIATIONS

	REP	REC	TOTU	PER	STR	TOTF	ROLE	CONS	PROD	PRED	INT	SUP	SCHOOL CLIMATE	MEANS	STANDARD DEVIATIONS
LBDQ	.55	.78	.35	.87	.74	.43	.80	.61	.42	.78	.84	.43	.48**	360.32	22.35
REP		.24	-.14	.44	.43	-.14	.66	-.01	.61	.25	.31	.51	.01	19.27	1.44
REC			.35	.68	.51	.34	.68	.50	.20	.81	.72	.28	.48**	18.86	1.90
TOTU				.22	-.11	.69	-.01	.66	-.51	.50	.40	-.13	.31	34.19	2.71
PER					.69	.22	.72	.41	.41	.66	.63	.48	.34*	35.19	3.71
STR						-.07	.78	.14	.65	.42	.61	.28	.14	37.32	3.69
TOTF							-.04	.78	-.36	.50	.56	-.12	.49**	38.75	3.82
ROLE								.21	.58	.55	.55	.44	.20	37.73	3.90
CONS									-.27	.59	.67	-.13	.55**	37.19	3.96
PROD										.08	.18	.46	.03	31.42	4.22
PRED											.71	.21	.46**	17.66	1.42
INT												.15	.55**	17.71	2.22
SUP													.12	35.51	2.64
LIKERT														3.46	0.18

LEGEND

LBDQ - LBDQ Total Score
REP = Representation Subscale
REC = Demand Reconciliation Subscale
TOTU = Tolerance for Uncertainty Subscale
PER = Persuasiveness Subscale
STR = Initiation of Structure Subscale
TOTF = Tolerance of Freedom Subscale
ROLE - Role Assumption Subscale
CONS = Consideration Subscale
PROD = Production Emphasis Subscale
PRED = Predictive Accuracy Subscale
INT = Integration Subscale
SUP = Superior Orientation Subscale
SCHOOL CLIMATE = Correlation with Likert Climate Questionnaire

** Significant at p<.01
* Significant at p<.05

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